Witness CCS – 7
CCS Exhibit – 7

BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

	)	**Docket No. 04-035-42**
In the Matter of the Application	)	
Of PacifiCorp for Approval of	)	**PRE-FILED DIRECT TESTIMONY OF**
Its Proposed Electric Service	)	**PHILIP HAYET**
Schedules and Electric	)	**FOR THE COMMITTEE OF**
Service Regulations	)	**CONSUMER SERVICES**

3 December 2004

TABLE OF CONTENTS

INTRODUCTION

Q. PLEASE STATE YOUR NAME, TITLE AND BUSINESS ADDRESS.

A. My name is Philip Hayet, and I am President of Hayet Power Systems Consulting ("HPSC"), 215 Huntcliff Terrace, Atlanta, GA 30350.

Q. PLEASE STATE YOUR OCCUPATION AND ON WHOSE BEHALF YOU ARE TESTIFYING.

A. I am an electric utility industry consultant and I am testifying on behalf of the Utah Committee of Consumer Services ("Committee").

Q. WHAT CONSULTING SERVICES DOES HPSC PROVIDE?

A. HPSC provides consulting services related to electric utility system planning, load forecasting, resource analysis, production cost modeling, and utility industry policy analysis.

Q. PLEASE SUMARIZE YOUR QUALIFICATIONS AND APPEARANCES.

A. My qualifications and appearances are provided in CCS Exhibit 7.1 attached to my testimony.

PURPOSE AND SUMMARY

Q. WHAT IS THE PURPOSE OF THIS TESTIMONY?

A. In addition to another Committee witness, Mr. Randall Falkenberg, I sponsor various adjustments to PacifiCorp's net power costs for the test year period April 2005 to March 2006. My testimony addresses specific data assumptions that PacifiCorp relied on in its Net Power Cost Model ("GRID"), which result in revenue requirement being overstated for the test year.

Q. PLEASE SUMMARIZE YOUR TESTIMONY.

A. Mr. Falkenberg provides the results of both of our analyses in his Table 1. The adjustments that I support are numbered 8, 9, 10, and 23 in the table. My recommended adjustments are as follows:

1. PacifiCorp did not properly represent the US Magnesium ("US Mag") Qualifying Facility ("QF") contract in its GRID model. This is a new contract that has been accepted by all parties, and is currently undergoing Commission review. I have corrected the deficiencies in GRID and recommend an adjustment based on my revised modeling.

2. PacifiCorp has not accurately modeled the Company's right to dispatch the Desert Power QF contract. I propose an alternative representation of the contract in GRID that allows PacifiCorp to dispatch Desert Power's unit in an optimal fashion, which reflects the contract terms.

3. PacifiCorp has not modeled two new QF contracts, one with Tesoro and the other with Kennecott. The Utah Commission recently approved both contracts. I have incorporated these contracts in PacifiCorp's GRID model.

4. PacifiCorp has overstated the amount of energy losses that it reflected in its load forecast by relying on an energy loss factor that is approximately 6% too high. I have reduced the amount of energy losses, which lowers net power costs.

LONG-TERM CONTRACT ADJUSTMENTS

Q. PLEASE PROVIDE BACKGROUND CONCERNING THE US MAGNESIUM QF CONTRACT.

A. US Mag owns a 36 MW combustion turbine unit that originally began operation around 1970. US Mag has self-certified as a QF in accordance with the Federal PURPA statutes, and it recently requested a new QF contract in accordance with the current Schedule 38 QF tariff. As recently as November 18th, parties including PacifiCorp, US Mag, the Division of Public Utilities ("DPU"), and the Committee worked together to reach a

settlement agreement for US Mag's QF contract, which the Commission is currently reviewing. The final terms of that contract have not been properly reflected in PacifiCorp's GRID model.

Q. PLEASE EXPLAIN THE MAJOR TERMS OF THE CONTRACT.

A. US Mag will operate as a non-firm QF that has the right to put energy to PacifiCorp at its discretion, for which it will be paid at a rate of 93% of the Dow Jones on-peak and off-peak Palo Verde Index. In addition, the contract also permits US Mag to receive an avoided cost payment for energy losses based on approximately 3.7% of the energy it sells to PacifiCorp and priced using the same Palo Verde Index price.[1]

Q. HOW WAS THE US MAG CONTRACT REPRESENTED IN GRID AND WHAT CHANGES DID YOU MAKE?

A. The US Mag contract was changed in the following four ways:

1. Contract Energy - The US Mag contract states it is a 36 MW resource and estimates that US Mag will sell PacifiCorp approximately 238,272 MWh of energy on an annual basis. PacifiCorp modeled US Mag for part of the test year as a 50 MW purchase with an annual energy amount of 295,336 MWh, which is approximately 24% greater than the contract estimate. I reduced the maximum capacity of the contract to 27 MW, which is below the 36 MW contract limit. This resulted in

[1] When Desert Power operates (estimated to be 85% of the time, including times when it sells non-firm energy) US Mag receives a loss factor of 3.5%. When Desert Power is offline, US Mag receives a loss factor of 4.92%. So the 3.7% loss factor = .85 * 3.5% + .15 * 4.92%

PacifiCorp purchasing 236,520 MWh from US Mag over the annual test period, which is much closer to the estimated contract amount of 238,272 MWh.

2. Contract Rate - The $/MWh rate PacifiCorp used to price the US Mag contract does not appear to reflect the contract terms, which requires payment based on 93% of the Palo Verde Index. I revised the pricing to reflect a Palo Verde Index based price. The Company includes hourly Desert Southwest ("DSW") market prices that GRID uses to determine short-term balancing purchases and sales. These DSW market prices reflect transactions at the Palo Verde trading hub based on PacifiCorp's forward price curve. For each month, I used the DSW market prices to compute an on-peak (16 on-peak hours) and an off-peak average price (8 off-peak hours), which I used as a proxy for the Palo Verde Index prices that were then used to price the US Mag energy.
3. Energy Loss Factor – PacifiCorp's payment to US Mag also does not appear to incorporate an energy loss factor in the payment. I accounted for energy loss payments by increasing the monthly average on-peak and off-peak energy prices by 3.7% to account for the avoided cost energy loss payment that PacifiCorp is obligated to pay US Mag. With this adjustment, the energy payment in GRID to US Mag incorporates a payment for non-firm energy and for energy losses, which is in accordance with the US Mag contract.

4. Capacity Payment – PacifiCorp's GRID model provides for a capacity payment to US Mag. However, under the pending contract, US Mag will supply non-firm QF energy to PacifiCorp, and therefore, US Mag will not be entitled to receive capacity payments from PacifiCorp.[2] I simply removed the $1.8 million capacity payment from GRID that PacifiCorp assumed it would make to US Mag.

Q. WHAT IS THE TOTAL AMOUNT OF YOUR US MAG QF CONTRACT ADJUSTMENT?

A. After implementing the above changes to the US Mag representation in GRID, net power costs decreased by $1,136,840 on a Utah basis.

Q. PLEASE EXPLAIN YOUR DESERT POWER QF CONTRACT MODIFICATION.

A. Desert Power recently signed a contract to sell PacifiCorp 95 MW of firm capacity beginning January 2006. The contract provides PacifiCorp with the right to dispatch Desert Power to meet PacifiCorp's system requirements. However, PacifiCorp did not reflect its "right to dispatch" Desert Power in its GRID model. As such, I removed PacifiCorp's Desert Power transaction model and inserted a dispatchable unit model in its place. By contract, Desert Power will be dispatched based on a heat rate of 8,837 Btu/kWh in 2006, and will also receive a payment for energy losses equivalent to 4.92% of the energy. Therefore, I modeled Desert Power as a firm generating unit with a dispatch price equal to its heat rate,

[2] Originally, US Mag had requested a contract to sell firm capacity service, but later decided to sell only non-firm power.

9,271 Btu/kWh (8,837 Btu/kWh * 1.0492 = 9,271) times a fuel cost. Since Currant Creek is the newest unit that PacifiCorp will be adding to its system, I used the Currant Creek gas price to model Desert Power's fuel cost.

Q. WHAT WAS THE RESULT OF YOUR MODIFICATION TO PACIFICORP'S DESERT POWER QF MODEL?

A. Based on my Desert Power dispatchable QF model, PacifiCorp buys less energy (84,528 MWh) from Desert Power, compared to the energy (114,304 MWh) in PacifiCorp's non-dispatchable model. This reduction in energy purchased from Desert Power results in an overall savings of $709,164 on a Utah basis.

Q. PLEASE EXPLAIN YOUR TESORO AND KENNECOTT QF CONTRACT ADJUSTMENTS.

A. In the interest of fully modeling all QF resources that will supply energy to PacifiCorp in the 2006 test year, I have added the new Kennecott and Tesoro QF contracts to PacifiCorp's GRID database.

Q. WHAT ARE THE TERMS OF THESE QF CONTRACTS?

A. Both of these contracts are similar in that PacifiCorp will purchase non-firm QF energy from these companies based on a rate of 93% of the Palo Verde on-peak and off-peak prices. Unlike US Mag, neither Tesoro nor Kennecott will be paid an amount for line losses. By contract, Tesoro is a 12 MW resource that is estimated to supply approximately 52,122 MWh of energy on an annual basis. Kennecott is a 32 MW resource that is

estimated to supply approximately 160,000 MWh of energy on an annual basis.[3]

Q. DID YOU INCLUDE THESE CONTRACTS IN YOUR GRID DATABASE?

A. Yes. I used the same Palo Verde based prices that I developed for US Mag. However, I did not increase the payment rate to account for energy losses because these two QF contracts do not have an avoided cost energy loss provision. Second, I modeled the capacity and energy to reflect the estimated contract energy. In the case of Tesoro, the results show an annual energy purchase of 52,560 MWh, which is close to the contract estimate of 52,122 MWh. As for Kennecott, the results show an annual energy purchase of 160,512 MWh, which is also close to the contract estimate of 160,000 MWh.

Q. WHAT IS THE AMOUNT OF YOUR TESORO AND KENNECOTT ADJUSTMENTS?

A. Net power costs increased with the inclusion of these two transactions in the GRID database. After including these two contracts, net power costs increased by $494,644 on a Utah basis.

ENERGY LOSS ADJUSTMENT

Q. PLEASE DISCUSS HOW ENERGY LOSSES ARE INCLUDED IN THE GRID MODEL.

A. In a net power cost model such as GRID, the modeled load forecast

[3] Kennecott has also requested an extended maintenance outage period covering all of April and May of each year.

includes both metered energy sales to customers plus energy losses incurred in transmitting energy over the transmission and distribution system. To satisfy that energy requirement, PacifiCorp must generate or purchase more energy than consumed by customers in order for that power to be able to reach customers.

Q. WHAT PROBLEM HAVE YOU IDENTIFIED WITH REGARD TO THE AMOUNT OF ENERGY LOSSES THAT PACIFICORP INCLUDED IN ITS LOAD FORECAST?

A. For the future test year period, PacifiCorp determined that its energy losses will be 9.9329%. In other words, the Company believes that in every hour it will have to generate or purchase an additional 9.9329% of energy above the amount it will sell to its customers in order to satisfy its load requirement. However, based on a review of historical energy losses that the Company has incurred, I believe this overstates the amount of energy losses that will be incurred in the future. My calculations show that energy losses should only be 9.269%, which on the surface appears to be close to the Company's assumptions. However, 9.269% is actually 6.6% lower than PacifiCorp's energy loss assumption of 9.9329%. Based on my recommended lower energy loss factor, PacifiCorp's overall energy requirement should be 336,771 MWh lower than PacifiCorp's load forecast assumption.

Q. HOW DID YOU DETERMINE THAT PACIFICORP'S ENERGY LOSS ASSUMPTION IS OVERSTATED?

A. In response to DPU DR 11.7, PacifiCorp provided historical energy loss factors that actually occurred during the period of 1999 through 2003. Over that period, the energy loss factors ranged from a low value of 8.7721% to a high value of 9.9041%. There wasn't a single year in which the energy loss factor was as high as what PacifiCorp is now forecasting for the April 2005 through March 2006 period (9.9329%). In fact, in the last year in which data was provided (2003), the energy loss factor was the lowest value that it had been over the entire five-year period and it equaled 8.7721%.

Q. WHAT ADJUSTMENT DID YOU MAKE TO PACIFICORP'S ENERGY LOSS FACTOR ASSUMPTION?

A. I calculated a new energy loss factor based on the average of PacifiCorp's actual energy loss factors incurred over the past five years, which equals 9.269%. I then changed PacifiCorp's hourly load forecast as modeled in GRID to reflect this lower energy loss factor assumption. This resulted in a reduction in the energy load requirement over the test period of 336,771 MWh, which then resulted in lower net power costs on a system-wide basis of $12,141,934. The average energy cost savings amounts to $36.05/MWh for the energy saved ($12,141,934 / 336,771 MWh). On a Utah basis, the energy savings amount to $5.0 million.

Q. DO YOU HAVE ANY OTHER REASON TO SUPPORT YOUR BELIEF THAT THE ENERGY LOSS FACTOR SHOULD BE LOWER?

A. Yes. All utilities have the incentive to operate their systems efficiently for the benefit of both the shareholders and the ratepayers. Electric utility companies, like all businesses strive for productivity increases over time. Thus, it seems unlikely that PacifiCorp would encounter higher energy losses, suggesting lower productivity, during the future test period than it incurred over the five previous historical years.

Q. DOES THIS CONCLUDE YOUR PREFILED TESTIMONY?

A. Yes, it does.